Sheet <u>1</u> of <u>1</u>

Substitute form PTO-1449

U.S. Department of Commerce Patent and Trademark Office Attorney's Docket No. 13445-030001

Application No. 10/733,873

Information Disclosure Statement by Applicant (Use several sheets if necessary)

Gilles Benoit et al.

Filing Date

Applicant

Group Art Unit 1731

(37 CFR §1.98(b))

December 10, 2003

U.S. Patent Documents Examiner Desig. **Document Publication** Filing Date Initial ID Number Date Patentee Class Subclass If Appropriate 03/17/98 AA 5,729,646 Miyagi et al. 09/29/98 AB 5,815,627 Harrington AC 6,735,369 05/11/04 Komachi et al.

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner	Desig.	Document	Publication	Country or			Trans	slation
Initial	ID	Number	Date	Patent Office	Class	Subclass	Yes	No
	AD							

Other Documents (include Author, Title, Date, and Place of Publication)					
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Examiner Signature **Date Considered**

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Substitute Form PTO-1449 (Modified) NOV 1 7 700 mation Disclosure Statement

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U.S. Patent Documents Publication Filing Date Examiner Desig. Document Class If Appropriate Initial Date Subclass ID Number Patentee 3,659,915 05/02/72 Maurer et al. AA AB 4,688,893 08/25/87 Laakmann 06/05/90 Croitoriu et al. AC 4,930,863 03/05/96 Croitoriu et al. AD 5,497,440 5,729,646 03/17/98 ΑE Miyagi et al. AF 5,815,627 09/29/98 Harrington 08/10/99 Tripathy et al. AG 5,935,491 AΗ 10/10/00 6,130,780 Joannopoulos et al. ΑI 6,172,810 01/09/01 Fleming et al. Kawanishi et al. ΑJ 6,404,966 06/11/02 AK 6,463,200 10/08/02 Fink et al. AL 6,463,200 10/08/02 Fink et al. AM 2002-0164137 11/07/02 Johnson et al. 03/06/03 AN 2003-0044158 King et al. AO 6,606,440 09/12/03 Hasegawa et al. AP 05/11/04 6,735,369 Komachi et al.

Foreign Patent Documents or Published Foreign Patent Applications								
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Initial	ID	Number	Date	Patent Office	Class	Subclass	⊪Yes⊯	₹Nö∴
on	AQ	1,198,904	05/14/68	Great Britain				
	AR	EP 0 844 501	05/27/98	Europe				
	AS	WO 99/47465	09/23/99	WIPO				, l
	AT	WO 00/46287	08/10/00	WIPO				
	AU	WO 02/41050	05/23/02	WIPO				
	AV	WO 02/061467	08/08/02	WIPO				
	AW	WO 02/072489	09/19/02	WIPO				
	AX	WO 03/079077	09/25/03	WIPO				

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Foreign Patent Documents or Published Foreign Patent Applications							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation
on	AY	WO 03/079073	09/25/03	WIPO			

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	Other D	ocuments (include Author, Title, Date, and Place of Publication)
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Initial	ID	Document
on	AZ	Allan et al. "Photonic crystal fibers: effective-index and band-gap guidance." Photonic Crystals and Light Localization in the 21st Century. 2001: Kluwer.
1	AAA	Barkou et al. "Silica-air photonic crystal fiber design that permits waveguiding by a true photonic bandgap effect." Optics Letters, 24:1, Jan. 1, 1999, pp. 46-48.
	ABB	Baumeister, P. "the transmission and degree of polarization of quarter-wave stacks at non-normal incidence." Opt. Acta, 8, 1961, pp. 105-119
	ACC	Birks et al. "Full 2-D photonic bandgaps in silica/air structures." Electronic Letters, 31:22, Oct. 26, 1995, pp. 1941-1943.
	ADD	Bormashenko et al. "Development of new-near-infrared filters based on the 'sandwich' polymer-chalcogenide glass-polymer composites." Optical Engineering, 40:5, 2001, pp. 661-662.
	AEE	Bormashenko et al. "New Oriented Polymer/Thermoplastic Glass Composites for IR Optics." Engineering Materials, 10, 2000, pp. ?-?.
	AFF	Bormashenko et al. "Optical Properties and infrared optics applications of composite films based on polyethylene and low-melting-point chalcogendie." Society of Photo-Optical Instrumentation Engineers, Feb. 2002.
	AGG	Bornstein et al. "Chalcogenide Hollow Fibers." Journal of Non-Crystalline Solids, 77:8, 1985, pp. 1277-1280.
	АНН	Broeng et al. "Analysis of air-guiding photonic bandgap fibers." Optics Letters, 25:2, 2000, pp.96-98.
	AII	Cregan et al. "Single-Mode Photonic Band Gap Guidance of Light in Air." Science, 285, Sep. 3, 1999, pp. 1537-1539.
	AJJ	Dai et al. "High-peak-power, pulsed CO ₂ laser light delivery by hollow glass waveguides." Appl Optics, 36, 1997, pp. 5072-5077.
	AKK	De Sterke et al. "Differential losses in Bragg fibers." J. Appl. Phys., 76:2, Jul. 15, 1994, pp. 680-688.
	ALL	Eggleton et al. Microstructured optical fiber devices." Optics Express, 9:13, 2001, pp. 698-713.
	AMM	Feigel A. et al. "Chalcogenide glass-based three-dimensional photonic crystals." Applied Physics Letters, 77:20, pp. 3221-3223, November 13, 2000.
	ANN	Fink et al. "A dielectric omnidirectional reflector." Science, 282:5394, 1998, pp. 1679-1682.
	A00	Fink et al. "Guiding Optical Light in Air Using an All-Dielectric Structure." Journal of Lightwave Technology, 17:11, Nov. 11, 1999, pp. 2039-2041.
	APP	Fitt et al. "Modeling the fabrication of hollow fibers: Capillary drawings." Journal of Lightwave Technology, 19:12, 2001, pp. 1924-1931.
	AQQ	Gopal et al. "Deposition and characterization of metal sulfide dielectric coatings for hollow glass waveguide." Optical Society of America, 2003. Optics Express, 11:24, Dec. 1, 2003.
	ARR	Harrington, J.A. "Infrared Fibers in Handbook of Optics." McGraw-Hill, 2001, pp. 14, 1-14, 13.
	ASS	Harrington, James. "A Review of IR Transmitting, Hollow Waveguides." Fiber and Integrated Optics, 19, 2000, pp. 211-217.
V	ATT	Hart et al. "External Reflection from Omnidirectional Dielectric Mirror Fibers." Science, 296, Apr. 19, 2002, pp. 510-513.

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on	AUU	Hilton, A.R., "Optical Properties of Chalcogenide Glasses." Journal of Non-Crystalline Solids, 2, 1970, pp. 28-39.
	AVV	Hongo et al. "Transmission of Kilowatt-Class Co2-Laser Light through Dielectric-Coated Metallic Hollow Wave-Guides for Material Processing." Applied Optics, 31:24, 1992. pp. 5114-5120.
	AWW	Ibanescu et al. "An all-dielectric coaxial waveguide." Science, 289:5478, 2000, pp. 415-419.
	AXX	Ibanescu et al. "Analysis of Mode Structure in OmniGuide Fibers." Physical Review E, 67:4, 2003.
	AYY	John, S. "Strong Localization of Photons in Certain Disordered Dielectric Superlattices." Physical Review Letters, 58:23, 1987, pp. 2486-2486.
	AZZ	Johnson et al. "Low-loss asymptotically single-mode propagation in large-core OmniGuide fibers." Optics Express, 9:13, 2001, pp. 748-779.
	AAAA	Keck et al. "On the ultimate lower limit of attenuation in glass optical waveguides." Applied Physics Letters, 22:7, 1973, pp. 307-309.
	ABBB	King et al"Laboratory preparation of highly pure As ₂ Se ₃ glass." J. Non-Cryst. Sol., 181, 1995, pp. 231 - 237.
	ACCC	Knight et al. "Photonic Band Gap Guidance in Optical Fibers." Science, 282, Nov. 20, 1998, pp. 1476-1478.
	ADDD	Kucuk et al. "An estimation of the surface tension for silicate glass melts at 1400°C using statistical analysis." Glass Technol., 40, 1999, pp. 149-153.
	AEEE	Mahlein. Generalized Brewster-angle conditions for quarter-wave multilayers at non-normal incidence." J. Opt. Soc. Am., 64, 1974, pp. 647 - 352
	AFFF	Marcatilli et al. "Hollow metallic and dielectric waveguides for long distance optical transmission and lasers." Bell Syst. Tech. J., 43, 1964, pp. 1783-1809.
	AGGG	Mossadegh R. et al. "Fabrication of single-mode chalcogenide optial fiber." Journal of Lightwave Technology, 16:2, pp. 214-216, February 1998.
	АННН	Matsuura et al. "Hollow infrared fibers fabricated by glass-drawing technique." Optics Express, 10:12, 2002, pp. 488-492.
	AIII	Matsuura et al. "Small-bore hollow waveguide for delivery of near singlemode IR laster radiation." Electronic Letters, 30, 1994, pp. 1688-1690.
	AJJJ	Maurer et al. "Fused silica optical waveguide." Corning Glass Works, 1972.
	AKKK	Mitra et al. "Nonlinear limits to the information capacity of optical fibre communications." Nature, 411, 2001, pp. 1027-1030.
	ALLL	Miyagi et al. "Design Theory of Dielectric-Coated Circular Metallic Waveguides for Infrared Transmission." Journal of Lightwave Technology, 2:2, 1984, pp. 116-126.
	AMMM	November 23, 2000.
	ANNN	Nishii, J. et al. "Chalcogenide glass fiber with a core-cladding structure." Applied Optics, 28: 23, pp. 5122-5127, December 1, 1989.
	A000	Nubling et al. "Hollow-waveguide delivery systems for high-power, industrial CO ₂ lasers." Applied Optics, 34:3, Jan. 20, 1996, pp. 372-380.
	APPP	Ouyang et al. "Comparitive study of air-core and coaxial Bragg fibers: single-mode transmission and dispersion characteristics." Optics Express, 9:13, 2001, pp. 733-747.

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Other Documents (include Author, Title, Date, and Place of Publication)							
Examiner Desig. ID AQQQ		Document Pottage et al. "Robust photonic band gaps for hollow core guidance in PCF made from high index glass." Optics Express, 11:22, Nov. 3, 2003, pp. 2854-2861.					
	ASSS	Rundquist et al. "Phase-matched generation of coherent soft-X-rays." Science, 280:5368, 1998, pp. 1412-1415.					
	ATTT	Sanghera et al. "Active and passive chalcogenide glass optical fibers for IR applications: a review." Journal of Non-Crystalline Solids, 257, 1999, pp. 6-16.					
	AUUU	Sanghera, J.S. et al. "Development and infrared applications of chalcogenide class optial fibers." Fiber and Integrated Optics, 19:3, pp. 251-274, March 1, 2000.					
	AVVV	Sanghera, J.S. et al. "Fabrication of long lengths of low-loss IR transmitting AS40S (60-X) sex glass fibers." Journal of Lightwave Technology, 14:5, pp. 743-748, May 1, 1996.					
	AWWW	Seddon, A.B. "Chalcogenide glasses: a review of their preparation, properties and applications." J. Non-Cyrst. Sol., 184, 1995, pp. 44 - 50.					
	AXXX	Temelkuran et al. "Wavelength-scalable hollow optical fibres with large photonic bandgaps for CO ₂ laser transmission." Nature, 420, Dec. 12, 2002, pp. 650-653.					
	AYYY	Temelkuran et al. "Low-loss infrared dielectric materials system for broadband dual-rang omnidirectional reflectivity." Optics Letters, 26, 2001, pp. 1370 - 1372.					
	AZZZ	Varsheneya A.K. Fundamentals of Inorganic Glasses, Academic Press, San Diego, pp. 5-7,1994.					
	AAAAA	Varshneya, A. K. "Some comments on physical properties of chalcogenide glasses." J. Non-Cryst. Sol., 273, 2000, pp. 1-7.					
	ABBBB	Vienne et al. "First demonstration of air-silica Bragg fiber." Optical Society of America, 2003. Institute of Electrical and Electronics Engineers. Optical Fiber Communication Conference and Exposition Postdeadline Papers.					
	ACCCC	Weber et al. Giant Birefringent Optics in Multilayer Polymer Mirrors." Science, 287, 2000, pp. 2451 - 2457.					
	ADDDD	Winn et al. Omnidirectional reflection from a one-dimensional photonic crystal." Optics Letters, 23, 1998, pp. 1573 - 1575.					
	AEEEE Yablonovitch. E. "Inhibited Spontaneous Emission in Solid-State Physics and Electronics." Physical Review Letters, 58:20, 1987, pp. 2059-2062.						
	AFFFF	Yeh et al. "Theory of Bragg Fiber." Journal of the Optical Society of America, 68:9, 1978, pp. 1196-1201.					
1/	AGGGG	Yeh et al. Electromagnetic propagation in periodic stratified media. I. General theory." J. Opt. Soc. Am., 67, 1977, pp. 423 - 438.					

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